Minutes of the Seventeenth Meeting
of the
Laboratory Operations Board

December 2, 1999

Perseverance Hall
Building 54, Room 130
Lawrence Berkeley National Laboratory
Berkeley, California

The seventeenth meeting of the Laboratory Operations Board (LOB) was called to order by Co-Chair Ernest Moniz. He welcomed those in attendance and thanked the staff at the Berkeley Lab and Jim Turner of the Oakland Operations Office for their efforts in hosting and preparing for the meeting.

Dr. Ernest Moniz gave a brief review of issues of relevance to the Laboratories that emerged from the 1999 Congressional session, including the creation of the National Nuclear Security Administration, the Laboratory Directed Research and Development (LDRD) program funding limits, and caps on travel. He stated that all of these actions would have an impact on how the laboratories do business. After giving an overview of the agenda, he recognized Dr. Martha Krebs, noting her imminent retirement, before turning the meeting over to his Co-Chair, Dr. John McTague.

Dr. McTague recognized Dr. Krebs' accomplishments support of the Laboratory Operations Board. He then introduced Dr. Paul Fleury, Chair of the Working Group charged with reviewing the Department's Laboratory Directed Research and Development Program.

Dr. Fleury reviewed the charge to the Working Group, comprised of Drs. John Armstrong, Al MacLachlan, and McTague. After giving some background on LDRD, Dr. Fleury described the approach taken by the Working Group and explained that the objective for LDRD is to support high-risk research and development at the laboratories. He described the management oversight procedures at the defense and science laboratories, using flowcharts as visual aids.

Dr. Moniz asked what types of reviews were in place. Dr. Fleury explained that projects received a peer review. Whether an internal review committee reviewed the project or a committee made up of internal and external members depended on the level of the program. Dr. Fleury concluded that while the flow charts might look intimidating, the procedures worked well without being overly intrusive. The Working Group concluded that the quality of checks and balances was good and well managed; that reporting was complete, thorough, and efficient; and that the work was of high quality. Dr. Fleury described several metrics for determining the quality of the research projects, including the number of awards, patents, and publications achieved in competition with work from other public and private research and development endeavors.

Dr. Moniz asked if the LDRD money supported long-term "downstream" research, suggesting that some projects might be too far downstream towards technology demonstration. Dr. Fleury said that the Working Group had determined that about 50% of the work focussed on projects that would have an impact at some time in the future.

Dr. Fleury also reported that the Working Group focussed on the Defense Program laboratories, the sector most affected by the funding cap. Dr. Krebs commented on the need for LDRD in the Science labs, particularly with regard to the ability to make some decisions at the local level. Dr. Fleury said that after looking at best practices in the private R&D sector, the Working Group concluded that DOE's LDRD funding level appeared to be very low compared to private industry.

The Working Group concluded that the flexible research program is essential to the labs, that the program is properly utilized, that there is considerable oversight, that the reductions will have a serious impact on the science base at the laboratories, and that continued cuts will have a negative effect and could compromise national security. Dr. Fleury said that the Working Group will recommend that the program funding be raised at least to its former level, that the DOE simplify the oversight to be more consistent with best industry practices, and that the impact on the science base be carefully considered in the formation of the National Nuclear Security Administration.

The members' comments concerning the report included explanations concerning the concerns behind the congressional action, by Michael Telson and the negative impact on the laboratories' ability to recruit (Dr. Krebs and Bruce Tarter). Gerald Boyd stated that the funding prohibition would have a serious impact on Environmental Management (EM). Dr. Moniz suggested that the Working Group look at the impact on EM and assess the adequacy of the overall management process and the evaluation process for determining if programs should be continued for a second or third year.

After a 15-minute break, the Board turned its attention to performance-based management. Dr. McTague indicated that the Board intended to address performance-based management in increasing detail over the next year. He hoped to get the process for approaching performance-based management back into focus at this meeting. In introducing Mike Telson, he pointed out that the Chief Financial Officer has considerable responsibility for making sure that the principles are laid out properly and adhered to within the Department.

Mr. Telson stated that he hoped to define and then to establish where the Department is on performance-based management at present. He defined performance-based management as establishing performance objectives, deciding how to measure performance, collecting and evaluating the data, and then using the results to find and improve performance.

Mr. Telson stated that the Department has made progress towards establishing performance-based management. There is now a strategic plan and an annual

performance plan. The budgets are written as performance-based with a statement of what will be delivered for a certain investment. In March, the Department will provide an accountability report that will include the Department's performance results. Mr. Telson indicated that for the laboratories there is a compliance orientation because some things, such as security requirements, travel restrictions and laboratory funding plans are imposed on the Department. This is acceptable because these issues are the public's business, and the Department has a responsibility to the public.

Richard Hopf, Deputy Assistant Secretary for Procurement and Assistance Management, commented with regard to the contracts. He identified the Government Performance and Results Act (GPRA) as the major driver with regard to Performance Based Management. He indicated that the concept is critical in contracting, where the Performance-based Management is in place under the name of Performance-based Contracting. Mr. Hopf perceives the two terms as describing the same thing. He noted that in 2000, his focus is on working with the program offices to inject specific actions into broad strategic missions. He also noted that Dr. Krebs has attempted to do this in the Office of Science and observed that it is difficult to effect Performance-based Management in a Research and Development activity.

Mr. Hopf suggested that the Laboratory Operations Board could be very helpful in this effort by exploring some of the fundamental questions regarding how do you measure performance in an R&D environment and by recommending what are appropriate objectives and measures. Hopf indicated that his thrust now will be to achieve a better linkage between what we consider to be federal program management and what is typically thought of as contract performance management.

Mike Telson reiterated Mr. Hopf's suggestion that it would be useful to hear from the LOB on how to do Performance-based Management.

In a discussion between Mr. Hopf and Dr. Krebs, the question was asked as to what other agencies, such as the National Science Foundation and the National Aeronautics and Space Administration, have done. Hopf indicated that he thinks these agencies are more in the mode of defending R&D from performance management than in figuring out the correct approach to doing it, that is, determining what outcomes you're looking for and how to translate it into a contract.

Dr. Krebs listed some high-level measures identified in the Office of Science: quality, relevance, success in constructing and operating research facilities, and effectiveness and efficiency of research program management. These measures are expressed annually in responding to the Laboratories' Summary Appraisals.

Dr. Moniz noted that, based on the discussion, he thought that there was too great an emphasis on quantitative measures for research and development. He believed that the only sensible approach to judging basic research quality was to use some form of peer review. Otherwise, he feared that in the measuring process the desired outcome could become distorted.

Further discussion focussed on determining what should be the desired outcome of basic research and if this could be expressed as advancing the level of knowledge. Dr. McTague distinguished between two classes of approach: Year to year, the peer review process is used to make prospective assessments of what has occurred. At the same time, a retrospective assessment of the product of a past period can be made.

Mr. Telson turned the discussion away from R&D and back to performance-based management by citing an example of a situation in which the GAO investigated excessive travel. He said that the challenge in managing performance-based management was to do it in a way that the results were beneficial to the Department.

Taking note of the time, Dr. McTague introduced the next presenters, who were to discuss performance-based management from the perspectives of the Field Office, the contractor, and a Laboratory. Jim Hirahara described the approach taken at the Oakland Field Office. He said their intent was to integrate a site-specific set of performance measures with the Headquarters strategic plans. He stated that by writing the performance measures into the contract, the focus became one of developing the critical measures at a point in time, not the hot issues of the day. The criteria his office had identified include science and technology criteria, human resources, financial management, property, procurement, customer satisfaction, and compliance with good business practice or DOE requirements. He stated that the Field Office was attempting to shift oversight from compliance based to a process orientation.

Mr. Hirahara described assessment in terms of encouraging a critical self-assessment and enforcing a rigorous operational awareness program. He stated that the process requires dialogue between the operations office and the laboratory and strong leadership commitment. He stated that most important in performance-based management is having clearly stated objectives and ensuring that expectations are known.

Klaus Berkner spoke from the laboratory (Berkeley Lab) perspective on Performance-based Management. He stated that before 1992, management oversight was one of compliance audits, but DOE has now moved from prescription and permission to outcomes evaluation. He described the process for evaluation as (1) setting the measures for performance evaluation in the contract between the University of California and DOE. In this process, the Lab and the Oakland Operations Office worked through the measures and set up some operating principles to enable the Lab to make it work. (2) The Lab undergoes a self-assessment of the science divisions using peer review panels in an open environment. The results are submitted to the Oakland Office and Headquarters for a final grade. The management and operations areas are different with the metrics set in advance and a self-assessment against the metrics, which is reviewed by independent auditors. The Oakland Office and DOE Headquarters are invited to participate in the process.

He stated that current events, such as the GAO report about attending conferences, security, etc., have led to DOE Orders and Congressional actions which seem to be driving the system back to the old practice of prescriptive management.

Dr. Moniz said that the method of grading performance by division sliced the science effort vertically when an important feature in performance should be how the divisions interact with each other to get things done.

Dr. Berkner responded by indicating that this was addressed through the mechanism of the strategic plan.

Dr. Robert VanNess, UC-Berkeley gave the contractor perspective. He said that performance-based management drives improvement by improving accountability. He provided charts showing that the science and technology, which were evaluated by peer review, had improved, based on the quality of the publications, that overhead costs had been reduced, and that administration and operational areas were improved.

He made the point that because it is based on benchmarking, performance-based management provides data that can be used to demonstrate that the DOE is well managed. However, he does not believe the system is in place at DOE Headquarters, although interest is growing. He emphasized that there is no policy in place; Headquarters needs to provide clear performance-based management leadership and commitment championed by the senior management team. He also expressed concern that the Department is being forced back into a compliance-driven style of management.

RADM Wertheim observed that when restrictions are placed on managers, they are relieved of accountability.

General discussion followed. Robert Gee stated that training could solve many restrictions that could lead to micromanagement. GEN Gioconda pointed out that every change in policy has a cost, which must be recognized and communicated to the policy makers.

The Board broke for lunch at 12:15 p.m. and returned at 1:52 p.m. Pacific Time..

Dr. Moniz reconvened the meeting, calling on Dr. McTague to give an update on the National Ignition Facility's review by the Secretary of Energy Advisory Board's NIF Laser System Task Force.

Dr. McTague described the facility under construction and summarized the problems identified that should have been caught by an effective review process. He noted problems having to do with the technology and problems stemming from the lack of up-front planning for system integration.

Dr. Fleury said that the UC Defense Review Committees are organized as line organizations. Consequently, projects are reviewed piecemeal rather than overall.

Dr. Moniz concluded discussion by saying that the Projects Team failed to do the in-depth project definition that was required. The project was beyond their historical experience. Dr. Moniz expressed his appreciation to the committee for their work.

Dr. Moniz then offered the floor to Martha Krebs. Dr. Krebs touched on the construction accomplishments of and key programmatic issues addressed by the Office of Science during her tenure. She identified as unfinished business the institutionalization of critical science and technology management mechanisms, noting that three entities need to be institutionalized within the Department: the Research and Development Council, the Laboratory Operations Board, and the Field Management Council. With the creation of the National Nuclear Safety Administration, the role of the Laboratory Operations Board must be to monitor and protect the laboratories so that the Office of Science will be able to interact with the weapons laboratories to maintain the science base.

Dr. Moniz next summarized the ongoing development of the Department's mission area research and development portfolios. He identified a next step in this effort as achieving integration with the portfolio structure, analyses, and laboratories' institutional plans to achieve an alignment. Dr. Moniz sees this as an effort in which the LOB can play a role.

Dr. Moniz, after observing that no one had signed up to make a public comment, called for any spontaneous remarks from the floor. Dr. Savitz mentioned her interactions with other agencies that might lead to interagency collaborations.

The meeting adjourned at 2:53 p.m. PT.

Members Attending:

Ernest J. Moniz, Co-Chairman
John P. McTague, Co-Chairman

External Members:

Dr. Robert P. Bringer
Dr. P. Fleury
Dr. Paul Gilman
Dr. Alexander MacLachlan
Dr. Maxine Savitz
RADM Robert Wertheim, USN (Ret)

Departmental Members:

Robert Gee, Assistant Secretary
Fossil Energy

Thomas F. Gioconda
Acting Assistant Secretary for Defense programs

Richard Hopf, Deputy Assistant Secretary
Procurement and Assistance Management

Martha Krebs, Director
Office of Science

William Madia, Director
Pacific Northwest National Laboratory

Bruce Tarter, Director
Lawrence Livermore National Laboratory

Michael Telson
Chief Financial Officer

James Turner, Manager
Oakland operations Office

Designated Federal Official:

Betsy Mullins